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ABSTRACT

Covered in the paper on the psychoeducational assessment of the multihandicapped child are the importance of the learning accomplished in the sensory motor period and the effects of evaluation media and sequence on child performance. Described are the six stages of sensory motor development measured by a Piagetian-based instrument developed by J. Hunt and I. Uzgiris. An initial screening of visual, auditory and motor skills is advocated along with probing the sequence of specific task dimensions. Among the indicators of functioning level cited are manipulation of media, imitation, and problem solving approaches. Additional information is explained to be obtained through analysis of the child's responses to developmental teaching. (CL)

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THE PROCESS OF THE PSYCHOEDUCATIONAL APPRAISAL OF THE MULTIHANDICAPPED CHILD

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The Process of the Psychoeducational
Appraisal of the Multihandicapped Child

Assessment of multiply handicapped children via norm referenced psychological instruments has become the target for considerable criticism with the passage of mandatory education legislation (Jedrysek, 1972; Keogh, 1972; Keogh, 1973; Knoblick & Pasamanick, 1974; Mann & Suiter, 1974; Hunt, 1975; Meier, 1975). Teachers relying on the information derived from the psychological evaluation to determine appropriate educational programming have received only confirmation that a specific child is delayed. Rarely has psychological evaluation of the multihandicapped child focused on cognitive style but primarily has resulted in a summary of numbers for placement purposes, offering no insights into how a child learns (Keogh, 1973; Jedrysek, 1972). Hunt (1975) suggested that rather than helping, psychologicals destroyed teacher motivation for ingenuity in conducting developmental activities.

Freedheim (1966), Banus (1971), Mann & Suiter (1974) and Hunt (1975) emphasized the importance of assessment-guided teaching and the failure of scores obtained from tests normed on children with intact sensory and neurological systems to fulfill this role. The purpose of this paper is to identify the importance of the sensory motor period and timing of learning in the evaluation of multiimpaired children, to define the intent of the psychoeducational evaluation, and to emphasize how the interrelationship of the media and sequence of the evaluation, the child's performance, and developmental teaching guide the evaluator in arriving at a developmental level and practical suggestions for educational programming.

Development and the multihandicapped child

The neuropsychological development of any child is directly dependent upon his participation in appropriate experiences at all stages of his growth. Particularly at the early ages, development of any skill is necessarily related to both the state of readiness and the opportunity available for developing the skill. When opportunities are available at the time of maximum readiness, skills are rapidly acquired by trial and error and by subsequent practice. If the opportunities are not appropriate for a specific skill to emerge when the child is most ready to develop it, he may have difficulty developing the skills at a later time. The more time that elapses between the period of optimum readiness and the time when the opportunity for learning is provided, the greater the difficulties in learning become. Significant in the sensory motor period are the limitations imposed by an impairment upon the timing of learning adaptive behaviors dependent upon intact sensory and motor functions. Early sensori-motor thought processes evolve into more complex mental operations as the child continuously interacts with his surroundings (Stephens, 1968). Uzgiris and Hunt (1975) have devised an instrument for assessing infants based on a Piagetian format which serves as a model on which to demonstrate the effects sensory or motor impairments impose upon early cognitive-adaptive progression. Knowledge of the stages described by Uzgiris and Hunt and the activities common to each stage has made them applicable to multihandicapped children in identifying specific developmental strengths, gaps, and deficits in their learning process. Therefore, no child is untestable if one acknowledges that any behaviorial response is appropriate to some age or level of central nervous system

functioning (Knoblick & Pasamanick, 1974). The six stages in the Uzgiris-Hunt framework are particularly useful in the evaluation of the multihandicapped child as they are the foundation upon which higher order skills are developed and the multihandicapped child has passed the teachable moment in two or more areas.

The first stage, visual pursuit and permanence of objects, begins with looking and leads to the discovery that an object is present even when not in view and progresses through pursuit of slowly moving objects, lingering of a glance at point of disaopearance of an object, acquisition of a partially hidden object, and of an object hidden under one or two screens. Even at this point the blind child's teachable moment has been arrested and the effects are seen in delayed integration of motor with auditory schemas for reaching and later for walking (Adelson & Fraiberg, 1974).

Development of means for achieving desired environmental events is initiated as the child engages in handwatching behaviors. In this stage the child begins reaching and grasping and proceeds to grasping when the hand and object are simultaneously in view, culminating in the infant's ability to manipulate a string to obtain a toy. The effects of an asymmetrical tonic neck reflex are seen in the cerebral palsied child's inability to grasp or pull toys to his midline. The teachable moment has passed not only for this child but also for the blind child. When the teachable moment occurred for integrating seeing with reaching and grasping for problem solving, neither child's body was ready to assimilate these schemas.

The development of schema in relation to objects emerges with the child's coordinating seeing, hearing, sucking, and grasping to suck his thumb, bring

objects before his eyes, shake and bang rattles, and explore objects orally, visually, and auditorially. The infant then becomes interested in showing objects and finding them as they are named. Already having passed the most advantageous times for developing behaviors dependent on vision and movement, the blind and the cerebral palsied child are delayed even further in recognition and exploration of objects in their environment. The effects of deafness emerge with the child's inability to perceive labels for objects, resulting in a severe language delay.

Evolving from development of means to ends relationships, causality grows out of the child's desire to retain pleasureable stimuli. Initially the child keeps an object in motion by kicking, shaking, and striking actions and later attempts to reactivate the toy by repeating the former motor schemas. Next he recognizes other people as initiators of action by returning a toy to them to activate and, eventually, operates a mechanical toy independently. The severely physically impaired child may be unable to reach, kick, and thus, to activate toys by either method. He then lacks the experience to realize his abilities as an initiator of events and passes the teachable moment for building concepts essential to later problem solving through discovery.

Construction of objects in space evolves with the child's coordination of looking and listening schemas. The infant seeks to visually orient to sound sources, to look for dropped toys, and to attack barriers or circumvent them to retrieve hidden objects. The deaf-blind child is the most severely affected as a result of passing the optimum time for the integration of sensory systems. He does not observe objects as they fall nor does he

attend to their sound as they strike a surface. He has no reason to attack a barrier since he does not realize it is obstructing a toy and he doesn't attempt to circumvent an obstacle under which his ball or toy has rolled. The deaf-blind child often lacks adequate sensory perceptors to be motivated to retrieve his toy by sound or movement. Associating auditory stimuli with its source and integration of gross motor movements are delayed as a result of limited experiential opportunities and the multiplicative effects of his impairments.

The development of imitation emerges in two forms, verbal and gestural. The infant's interest in sound and his own vocal mechanism motivates him to gradually refine his verbal imitations first through approximations and then through direct imitations of words in his receptive repertoire. Similar progression is seen in the infant's acquisition of gestural imitations. First developed are simple gross motor imitations he can already perform, followed by gestures he can see his body accomplish, and imitations which he cannot see his body enact are the last ones perfected.

The effects of passing the teachable moment for acquiring imitation skills are reflected in the deaf child's delayed language development and concept formation. At the time a normal hearing infant's vocalizations are reinforced through caregivers' imitations of his verbal output, the deaf infant ceases his babbling as a result of impaired sensory receptors to perceive imitative feedback.

Chewing motions, facial expressions, and appropriate postural control must often be taught to the multihandicapped blind child because he lacks intact sensory perceptors to learn from modeling of these behaviors.

Natural childhood imitation games such as pat-a-cake and peek-a-boo rarely emerge in the child retaining the asymmetrical neck reflex. His attempts to bring his hands to the midline are met with extraneous abnormal movements and he never experiences the appropriate kinesthetic or proprioceptive feedback which allow unconsciously executed imitative patterns.

Process-rather than product oriented, the educational evaluation is organized in structured situations to elicit the child's competence in each area of cognitive processing and to assess his capacity to initiate new adjustments in the presence of simple problem solving situations (Hunt, 1975).

Evaluation of the child's performance should embody careful analysis of his learning set, the task situation, and successful motivational and material characteristics. Bortner and Birch (1970) suggested that a child's behavior with a task did not reflect his capacity but represented a fragmented potential dependent upon the specific conditions of demands. The evaluation's primary purpose is to provide the teacher with information regarding the child's strengths and gaps in his learning process, activities appropriate for his cognitive style and functioning level, specific materials, and situational contexts that will enhance his learning capacity and acquisition of skills critical for adaptability to his ecological environment.

The Sequence

Essential to the evaluation process is a cursory screening of visual, auditory, and motoric abilities. Concrete information regarding the extent of visual, auditory, and physical capabilities is critical in the selection of the size, shape, and intensity of materials, as well as the distance from and position in which they are presented to the child to facilitate optimum responses. Formalized tests or subtests which will be appropriate for a child

functioning on a 24 month level and above and a beginning point for administering more in-depth developmental tasks to a lower functioning child be determined through informal or formal (Frankenberg & Dodd, 1972; Doll, 1963) screening procedures. Simple media such as paper, crayons, and colored blocks, function not only as indicators of fine motor coordination but also disclose the child's capacity to employ motor abilities in constructive and adaptive ends (Knobloch & Pasananick, 1974). DuBose & Langley (1976) have constructed a non-verbal cognitive-adaptive screening inventory for preschool children. Primarily developed for use by classroom teachers in the assessment of multihandicapped preschool children, the Developmental Activities Screening Inventory (DASI) provides adaptations for its administration to blind and to deaf children. The necessary materials are commonly found in preschool programs and elicit a wide array of cognitive processes including discrimination, association, sequential memory, and quantitative reasoning.

The Media

Assessment instruments have been standardized on handicapped children (Cain & Levine, 1963; Irwin & Hammill, 1964; Hiskey, 1966; Maxfield & Bucholz, 1957; Newland, 1971; Nirhira, K., Foster, R., Shellhaas, M. & Leland, H., 1974) and Curtis and Donlon (1974) and Stillman (1974) have standardized instruments purported to assess the development of multihandicapped children. The most meaningful and beneficial assessments of this population have derived from a combination of subtests extracted from psychoeducational scales to provide repetition and structured presentations of developmental activities (DuBose & Langley, 1976; Langley, 1976).

Each dimension of the learning process must be probed to pinpoint the child's level of conceptual development in each. Gaps revealed may inhibit the integration of processes essential for the acquisition of higher order skills. Instrumental in evoking the child's maximum capacity in each dimension is the media and the way in which it is presented. Selection of the media will depend upon the age of the child, his handicapping condition, response mode, approximate developmental level, and the process being probed. The media is the diagnostic tool employed to specifically pin-point the child's competence in the developmental hierarchy of sensory motor schemas, discrimination, association, temporal, spatial, and sequential relationships, long and short term memory, quantitative, deductive, and inductive reasoning, problem solving, and transfer of learning. The materials should be adaptable to any child, dimension, and learning level to allow the evaluator speed and flexibility in probing the sequence of a specific dimension. Modifications of the task are administered through a gradual retreat to lower functioning levels until the child demonstrates whether he can adapt at all within the specific cognitive dimension (Haeussermann, 1958). Probing the sequence of the memory task should involve modifying it from its most abstract to its most concrete level as in the following task of remembering one color from six:

a. The child remembers one colored block momentarily distinguished from five others

b. The child remembers one colored block from five, four, three, and two others.

c. The child remembers one colored counting bear from three others, and the choice is gradually reduced.

d. After watching four counting bears be hidden in relation to a box, the child finds the bears when asked to locate each by color.

e. Shown four pictures the child is asked to recall what he saw.

f. Shown four pictures from which one is removed the child identifies the missing picture.

g. Shown a model picture momentarily the child locates it in a series of four when the model is removed.

h. Steps e, f, and g, are repeated with common objects.

i. The child finds an object he observes hidden under one of three barriers, then two.

j. The child finds a block he observed hidden under a cup.

k. The child retrieves a toy he observed hidden with a cloth.

l. The child reaches for a partially exposed toy.

m. The child lingers his glance at the place where the object disappeared.

Any task may be similarly analyzed if the evaluator is aware of the sequential stages of development (Langley, 1976).

Close examination of the child's responses to each material may divulge the types of items he most enjoys and with which he most consistently succeeds. These materials may, in turn, serve as effective reinforcers during teaching sessions. Awareness of child development and analysis of what skills can be tapped by a specific stimulus item allows the diagnostician a wide range of commercially available toys and materials to employ as supplementary diagnostic tools.

The Child's Performance

Observing the child's performance as he manipulates the media reveals not only a pattern of learning but also indicates a developmental level. Imperative in the administration of tasks is determining the child's level of understanding what is expected of him. The evaluator must discern whether the child responded inappropriately because he lacked the concept or because he did not understand the demands of the task in the way in which it was presented. The presentation of tasks should begin on a level indicated by the child's activity with screening items and should be progressively modified to a more concrete or abstract level. Often the multihandicapped child requires a total physical guidance through a task before he makes any independent attempt to complete the task.

Next in the sequential hierarchy of comprehension is imitation, distinguished from the next level of demonstration by the temporal element. In imitation, the child simultaneously reproduces the evaluator's actions, while a demonstration requires that he repeat the actions immediately after watching the evaluator perform. A more complex level requires the child to copy a model constructed out of his sight; verbal directions accompanying the visual demonstration is next in the sequence of task presentation, and the most complex is verbal directions only.

The child's approach to problem solving is another indicator of functioning level. He may indiscriminately shake or bang task media or impulsively attempt to complete the task, performing the appropriate motor task rather than attending to the cognitive aspect. Often a child responds automatically to a task set, demonstrating the effects of previously

repetitive interactions with similiar or identical media and perseverating on a previously successful response is often characteristic of multi-handicapped children. The most efficient approach is manifested by the child who carefully scans all possible solutions before attempting to complete a task. Behaviorial characteristics may also emerge as the child rejects the task by throwing media or be eagerly solving a task in anticipation of something else to do.

The type of information the child relies on and his strategy applied in seeking solutions also describe his learning pattern and level. Analysis of the characteristics of the media with which the child is successful provides the evaluator with the aspect of tasks to which he attends most consistently. The blind child may attend to sound, form, position, and texture, while the deaf child relies on shape, configuration, color, and contexture. Strategies employed depend upon the child's level of organization, while visual or tactual exploration prior to action requires the most complex level of organization. The child's ability to dissect wholes into their component parts and reintegrate parts into meaningful relationships evidences his capacity to solve problems through deductive and inductive reasoning. Spontaneous self correction is an indicator of the child's ability to compare and contrast in attempt to evaluate his own performance.

Failure of a task provides the evaluator with a great deal about why a child performs as he does. Errors must be analyzed to determine if they are of a perceptual, intellectual, or motoric origin. For most conceptual dimensions assessed, several examples of items exist that tap the same

concept in various ways which are similar in structure or content. By comparing items it is not only possible to draw specific conclusions about the types of errors he is making but also to pinpoint whether the child's responses are concrete, functional, or abstract (Mann & Suiter, 1974). The task media is of critical importance in making this decision.

Developmental Teaching

Evaluation of multihandicapped children must necessarily incorporate teaching so that the evaluator can discover through which modality the child most efficiently learns, the amount and types of prompting he requires to complete tasks, the time he attends to various tasks and materials, the number of trials he must experience to learn a task, the speed with which he makes decisions, and his frustration tolerance for tasks of different natures. Additional information regarding the child's response may be obtained by having him repeat a task. If the behavior demanded is well established within his repertoire he will consistently approach the task in the same way but will need to solve it through trial and error or exhibit an inconsistent response if the behavior is just emerging.

Assessment of the child who manifests minimal responses or who screams, throws materials, and is aggressive to both self and the evaluator must primarily evolve from teaching. Observations of the type of stimuli and developmental activities to which the child responds and the extent of his motor abilities to reach, grasp, and control his head should take precedence over physically prompting the child through sensory motor behaviors. Sitting behind the child while working with him allows the evaluator more effective control over him and yields natural movements from the child. As the child

is physically guided through tasks and limits are placed upon him, the evaluator should be sensitive to any adaptive attempt from the child. The fact that he ceases creaming, throwing, biting, and resisting the physical prompting is of significant diagnostic relevance. Often adaptive behavior in this type of child emerges in his primitive anticipatory and associative responses of reaching for a block as he hears it tapped, patting a jack-in-the-box or flashlight when the stimuli is terminated, tapping a toy as it is dangled before him, or rejecting any object other thar his pacifier. Toys containing a light or sound source are most effective stimuli for attempting to elicit sensory motor behaviors in difficult to test children.

Assessment of the multihandicapped child requires careful observation of child-evaluator, child-media, and child-performance interactions which can be easily translated into a developmental baseline from which individual programming activities are designed.

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